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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,816	10/30/2003	Timothy A. Rost	TI-35257	1301

23494 7590 11/02/2006

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EXAMINER

CRANE, SARA W

ART UNIT PAPER NUMBER

2811

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/696,816		ROST ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Sara W. Crane		2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 2 and 4-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2 and 4-10 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Examiner has discovered the newly-cited reference of List et al, 6,706,584, which teaches a capacitor structure similar to that of Applicant's claims. Applicant's claims 2 and 4-10 remain allowed, because the examiner believes that the claim terminology of "cap layer" in Applicant's claim 1 is distinguishing, as noted below. However, because the meaning of this term has not been specifically discussed previously in the record, and because the specification does not use the word "definition" or "defined" in discussing this term, examiner believes that the record should indicate whether or not the Applicant agrees with the examiner's interpretation of the specification teaching.

### *Claim Objections*

Claims 2 and 4-10 are objected to because of the following informalities:

The record is not entirely clear as to the meaning of the term "cap layer" in claims 2 and 9. Examiner understands this term to mean that the cap layer is a layer which provides a bonding surface which offers better adhesion for ball bonds, bond wires, etc. than copper. Also, while the cap layer is metal, it is not considered a metal interconnect level, but merely a capping layer. This is as set forth in the Applicant's specification, paragraph [0013]. The examiner's concern here is the List reference, which seems to teach topmost first and second metal interconnects 72, 74, bottom capacitor electrode 18, capacitor dielectric 16, top electrode 14, and "bump" layer 83, which electrically connects the top electrode and one of the metal interconnects. The bump electrode is

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not referred to as a cap layer, and nowhere does this reference say anything about the presence of bonding on the layer, or about the suitability of the bump structure for bonding, as to size or surface properties.

So, the examiner's conclusion is that the claim term "cap layer," when understood as set forth in the specification, would not describe the bump layer of List et al. However, the term "cap layer" is used in the art in a number of ways, and it is possible that someone could understand the term to mean merely a top layer, not necessarily having any other meaning. If Applicant wishes to adopt a broader definition of this term than that set forth above, the examiner can withdraw the indication of allowability of the pending claims, and apply the List reference, to continue prosecution of the case.

So, at this point, Applicant should provide some indication in the record as to the meaning of the claim term "cap layer."

This application is in condition for allowance except for the following formal matters:

As noted above, the claim term "cap layer" is objected to, because, while the specification does discuss a precise meaning of the term, the discussion is not set forth in the form of a "definition," so that the examiner believes some discussion by Applicant of the meaning of this term should be provided.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

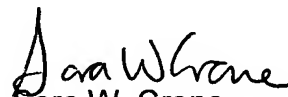
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A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (571) 272-1652.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sara W. Crane  
Primary Examiner  
Art Unit 2811